

COMPETITIVE ANALYSIS

Worldwide Analysis, Modeling, Design, and Construction Tools Competitive Analysis, 2003: 2002 Shares and Current Outlook

Rikki Kirzner

IDC OPINION

IDC's final assessment of the analysis, modeling, design, and construction (AMDC) tools market in 2002 reports a worldwide market sizing of \$465 million, representing a 21.2% decline from 2001. Market recovery is predicted to be slow but steady throughout the remainder of 2003. Highlights are as follows:

- ☒ IDC predicts a return to growth by the end of 2003. However, with the acquisition of two of the major vendors in this space late in 2002, the AMDC market is in transition. As the remaining independent vendors consider new competitive strategies and introduce better, easier-to-use tools with more capability to help guide or automate the AMDC processes, the market will grow. Traditional code development will be coupled with the newer methodologies found in visual and rapid application development (RAD) environments as well as with component development, which will increase the adoption and use of AMDC tools.
 - ☒ The AMDC tools market will achieve very slow albeit positive growth over the next several years, particularly with the growing interest in developing software as a Web service and translating complex specifications into code. AMDC tools are needed to help develop applications that are designed for easy access to the business logic and components that will be placed on a repository or in a directory for access by other applications. The formalized development processes and rigorous design methodologies of AMDC tools are ideal for this endeavor.
 - ☒ IDC believes that independent AMDC vendors should continue to partner with unified development environment (UDE) and third-generation language (3GL) vendors or integrate their tools with UDE tools. This trend, already under way in 2002, will help promote future growth and revenue share gains in this market. To be successful, vendors must focus on providing tools that will help developers get applications to market more quickly and at lower costs.
 - ☒ Vendors will also need to add new features to AMDC tools to accelerate the next stage of Web services. These tools also need enhancements that allow developers to separate business logic and business process from system-level code, where the business logic can be easily identified and extracted.
-

IN THIS STUDY

This IDC study examines the analysis, modeling, design, and construction tools market for the period 2001–2002, with vendor revenue trends. Worldwide market sizes are provided for 2002, with trends from 2001. Vendor competitive analysis, with revenue and market shares of the leading vendors, is provided for 2002. This study also provides profiles of leading vendors and identifies the characteristics that vendors will need to be successful in the future.

The vendor shares and competitive analysis contained herein update those found in *Worldwide Software Construction Components Forecast and Analysis, 2002–2006* (IDC #27267, May 2002).

METHODOLOGY

The IDC Software Research Group (SRG) market sizing and forecasts are presented in terms of "packaged software revenue." Packaged software is defined as programs or codesets of any type commercially available through sale, lease or rental or as a service. Packaged software revenue typically includes fees for initial and continued right-to-use packaged software licenses. These fees may include, as part of the license contract, access to product support and/or other services that are inseparable from the right-to-use license fee structure, or this support may be priced separately as software maintenance. Upgrades may be included in the continuing right of use or may be priced separately. The revenue counted by IDC is that which is recognized for accounting purposes by the vendor that owns or licenses the intellectual property rights to the software.

Packaged software revenue *excludes* service revenue derived from training, consulting, and system integration that is separate (or unbundled) from the right-to-use license but *includes* the imputed value of software included in a service that offers software functionality by a different pricing scheme (e.g., the imputed or stated value of software included in an application service provider's [ASP's] or other hosted software arrangement).

It is the total packaged software revenue that is further allocated to markets, geographic areas, and operating environments. For a more detailed definition of packaged software revenue, see *IDC's Software Taxonomy, 2003* (IDC #28820, February 2003). For a more detailed examination of the issues of revenue recognition, see *Software Revenue Recognition Policies and Their Effects on Market Data* (IDC #29458, May 2003).

IDC's industry analysts have been measuring and forecasting IT markets for more than 30 years. IDC's software industry analysts have been delivering analysis and prognostications for packaged software markets for more than 25 years.

The actual strategy incorporates information from five different but interrelated sources, as follows:

- Reported and observed trends and financial activity in 2002 as of the end of April 2003, including reported revenue data for public companies trading on North American stock exchanges (CY 1Q02–CY 4Q02 in nearly all cases).
- IDC's Software Census interviews. IDC interviews all significant market participants to determine product revenue, revenue demographics, pricing, and other relevant information.

- ☒ Product briefings, press releases, and other publicly available information. IDC's software analysts meet with hundreds of software vendors each year. These briefings provide an opportunity to review current and future product strategies, revenue, shipments, customer bases, target markets, and other key product information.
- ☒ Vendor financial statements and related filings. Although many software vendors are privately held and choose to limit financial disclosures, information from publicly held companies provides a significant benchmark for assessing informal market estimates from private companies. IDC maintains an extensive library of financial and corporate information focused on the IT industry. We further maintain detailed revenue by product area models on more than 1,200 worldwide vendors.
- ☒ IDC demand-side research. This includes thousands of interviews annually and provides a powerful fourth perspective for assessing competitive performance. IDC's user strategy databases offer a compelling and consistent time-series view of industry trends and developments. Direct conversations with technology buyers provide an invaluable complement to the broader survey-based results.

Ultimately, the data presented herein represents IDC's best estimates based on the above data sources as well as reported and observed activity by vendors and further modeling of data that we believe to be true to fill in any information gaps.

In addition, please note the following:

- ☒ The information contained in this bulletin was derived from the IDC Software Market database as of May 7, 2003.
- ☒ All numbers in this document may not be exact due to rounding.
- ☒ For more information on IDC's software definitions, see *IDC's Software Taxonomy, 2003* (IDC #28820, February 2003).

ANALYSIS, MODELING, DESIGN, AND CONSTRUCTION TOOLS MARKET DEFINITION

Analysis, modeling, design, and construction tools support formalized methodologies (either object oriented or nonobject) that assist in generating application requirements, data definitions, and programming specifications. Object-oriented AMDC tools provide automated support of one or more object-oriented methodologies and of some or all software-development life-cycle phases, including the ability to construct applications from domains and/or components if that ability is fully integrated and sold with the methodology.

SITUATION OVERVIEW

The AMDC market experienced negative growth (-21.2%) throughout 2002 as many companies decided to use 3GL or UDE tools that were already in-house or make do with existing 3GL tools, UDE tools, or those AMDC tools they had previously purchased. Steady overall growth is forecast due to the desire of many organizations to consider using AMDC tools as a way to increase developer productivity, decrease time to market, control costs, and implement Web services by using environments that allow developers and architects to translate specifications into models before writing code. Because of the increased emphasis on Web services and the recent acquisition of two major AMDC vendors, there will also be strong incentives, improvements in existing and newer products, and better marketing to encourage customers to use these tools.

Companies will want to move to newer technology when the economy improves, and they are expected to start using AMDC tools over the coming years as a viable way to improve quality of code produced, increase developer productivity, reduce development costs, and structure and organize applications so that they may more easily lend themselves to being used in Web services.

PERFORMANCE OF LEADING VENDORS IN 2002

The leading AMDC vendor in 2002 was Rational Software with \$154 million and a 33.1% share. Note that IBM announced the acquisition of Rational Software in December 2002, but since the transaction was not completed until early 2003, Rational 2002 revenue is reported separately from IBM's revenue. Computer Associates was in second place with \$58 million and a 12.5% share. Borland was the third-largest AMDC vendor, with \$44 million, giving the company a 9.4% share. Sybase moved into fourth place with \$20 million and a 4.4% market share. Telelogic moved into fifth position in 2002 with \$19 million. Of these top 5 vendors, only Computer Associates actually increased its revenue from 2001 to 2002 (see Table 1).

IBM's acquisition of Rational and Borland's acquisition of Togethersoft have essentially changed this market forever. These two companies will be incorporating AMDC tools as part of a full life-cycle application development suite of products that will be integrated so they work together seamlessly.

TABLE 1

WORLDWIDE ANALYSIS, MODELING, DESIGN, AND CONSTRUCTION SOFTWARE REVENUE BY VENDOR, 2000-2002 (\$M)

	2000	2001	2002	2002 Share (%)	2001-2002 Growth (%)
Rational	199.3	183.6	153.8	33.1	-16.3
Computer Associates Intl. Inc.	94.0	45.6	58.0	12.5	27.2
Borland Software Corp.	8.7	45.0	43.7	9.4	-2.9
Sybase Inc.	35.8	29.0	20.4	4.4	-29.5
Telelogic AB	35.0	29.3	19.3	4.1	-34.1
Visible Systems Corp.	12.8	12.5	9.9	2.1	-21.0
Embarcadero Technologies	4.1	10.6	9.9	2.1	-7.0
Popkin Software & Systems	12.8	7.2	9.5	2.0	31.2
Proforma Corp.	11.0	10.8	7.3	1.6	-32.2
Hitachi Ltd.	7.4	6.3	5.7	1.2	-8.9
Siemens AG	7.3	6.4	5.4	1.2	-16.2
Sapiens USA Inc.	7.0	5.4	5.1	1.1	-7.0

TABLE 1

WORLDWIDE ANALYSIS, MODELING, DESIGN, AND CONSTRUCTION SOFTWARE REVENUE BY VENDOR, 2000-2002 (\$M)

	2000	2001	2002	2002 Share (%)	2001-2002 Growth (%)
Eiffel Software Inc.	4.2	4.1	3.6	0.8	-12.5
Allen Systems Group Inc.	4.2	4.1	3.5	0.8	-13.5
Softteam	3.8	3.7	3.1	0.7	-16.6
Micro Focus	0.0	0.0	3.0	0.6	NA
Project Technology Inc.	4.0	3.9	2.8	0.6	-28.5
IntelliCorp Inc.	5.0	2.8	2.6	0.6	-6.6
Fujitsu Ltd.	2.9	2.7	2.5	0.5	-9.5
Ptech	0.5	2.7	2.4	0.5	-12.1
Aonix	18.0	17.6	2.0	0.4	-88.7
Oracle Corp.	62.2	54.4	2.0	0.4	-96.3
Quest Software	0.0	0.5	1.3	0.3	160.0
Hewlett-Packard	1.4	1.2	1.1	0.2	-2.7
Softlab	1.2	1.0	1.0	0.2	1.5
Enterprise Software Systems Inc.	1.2	1.2	0.7	0.2	-40.4
Critical Path	3.1	0.0	0.0	0.0	NA
Level 8 Systems	3.4	0.0	0.0	0.0	NA
Princeton Softech Inc.	10.0	0.0	0.0	0.0	NA
Subtotal	560.3	491.8	379.6	81.6	-22.8
Other	112.5	99.1	85.7	18.4	-13.5
Total	672.8	590.9	465.3	100.0	-21.2

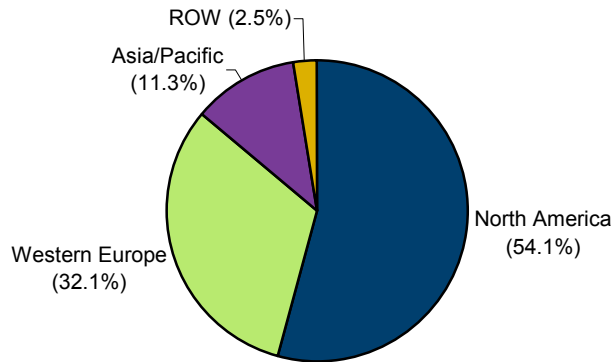
Source: IDC, May 2003

BY GEOGRAPHIC REGION

North America accounted for \$252 million, or 54.1% of worldwide AMDC tools revenue in 2002. Western Europe accounted for 32.1% of the market (see Figure 1).

FIGURE 1

WORLDWIDE ANALYSIS, MODELING, DESIGN, AND CONSTRUCTION SOFTWARE REVENUE
SHARE BY REGION, 2002



Total = \$465.3M

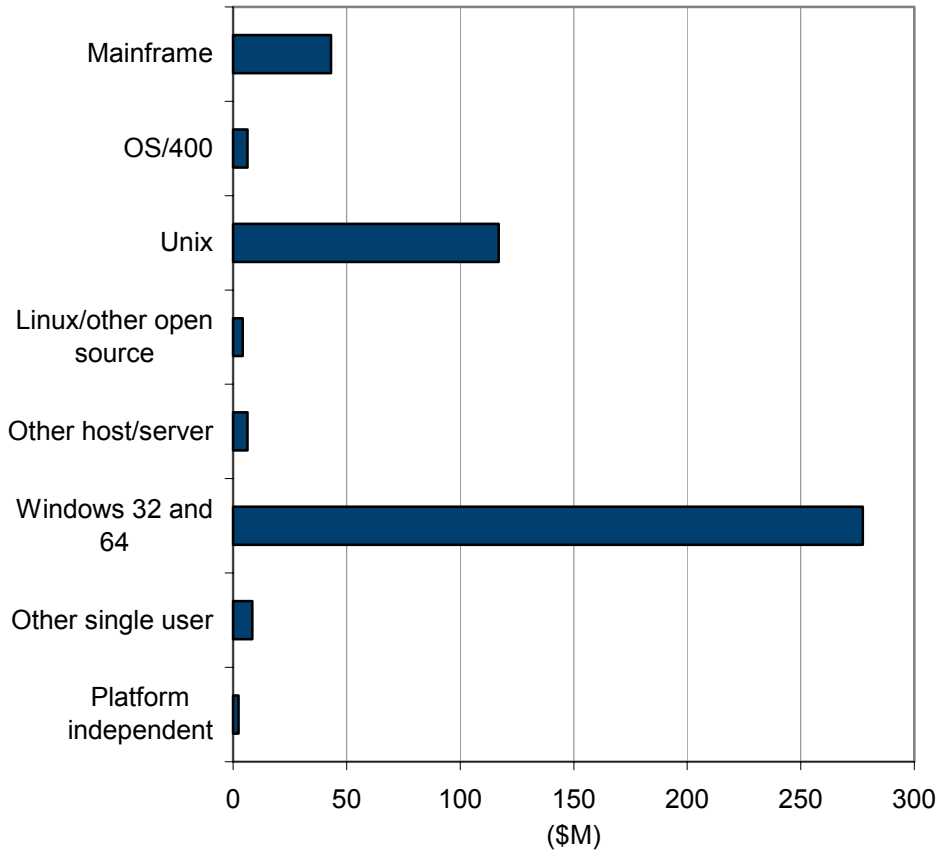
Source: IDC, May 2003

BY OPERATING ENVIRONMENT

Windows accounted for \$277 million and Unix accounted for \$117 million of the AMDC tools market in 2002 (see Figure 2).

FIGURE 2

WORLDWIDE ANALYSIS, MODELING, DESIGN, AND CONSTRUCTION SOFTWARE REVENUE
BY OPERATING ENVIRONMENT, 2002



Source: IDC, May 2003

VENDOR PROFILES

IBM/RATIONAL

IBM completed the \$2.1 billion acquisition of Rational Software Corp. in early 2003, making Rational the fifth brand in the IBM Software Group, next to WebSphere, DB2, Lotus, and Tivoli. The Rational acquisition gives IBM access to a variety of tools that support software development throughout the application life cycle, from design, modeling, and testing to quality assurance, software configuration management, and maintenance. Rational is a pioneer in the area of modeling and promoting the Unified Modeling Language (UML), and all this capability blends well with IBM's strategy to be a complete solutions provider as well as with the framework and architecture for design, development, deployment, and maintenance of applications.

IBM has once again totally revamped its tool strategy, adding new capability and full life-cycle support to its growing family of WebSphere application development tools to deliver support for Web services and AMDC tools capability. IBM's WebSphere Studio tool suite was designed to allow developers working on WebSphere Studio and other

Eclipse-based tools to use a common interface that provides a consistent look and feel, regardless of the vendor tool included in the WebSphere tool suite. As part of its consolidation toward a single architecture strategy, IBM folded all of its acquisitions under the WebSphere Studio umbrella.

IBM's WebSphere Studio 5.0 unites new and legacy technologies and builds an important bridge to open source flexibility through the Eclipse initiative. The product continues in the tradition of IBM's VisualAge tools with its facilities for code maintenance as an integral part of the process. The WebSphere Studio tools focus on open standards, multivendor tool integration, and integration with IBM's middleware. As part of its strategy, IBM continues to work to grow the developer community around WebSphere and partners with dozens of vendors that are developing on Eclipse-based tools to provide a full spectrum of functionality required by the diverse development community.

IBM STRENGTHS

IBM provides a full life cycle of design, development, and deployment tools that serve as a cross-platform and open standards-based development environment. Both IBM and Rational are companies with track records of creating enterprise-class solutions that will prevail and attract a strong following, capturing a large share of the developer interest. IBM's tools help control costs, improve efficiency, and improve productivity by providing developers with a single, well-integrated tool platform that can manage all aspects of development.

IBM's single, unified interface and integration with its recent acquisitions and its partners' products encourage team-oriented programming and developer collaboration among people with different skills, such as programmers, Web content developers, business analysts, database administrators, wireless and voice application developers, and graphic artists. The integrated tool platform also enables developers to customize their environment and mix and match tools of their choice, reducing the time required to learn new products and increasing developer productivity.

WebSphere Studio tools enable developers to implement requirements, design systems, analyze and model systems, create applications, and test them within the same environment. IBM Studio tools provide a common development environment across Windows and Linux so that Linux developers can create enterprise-ready applications directly on top of Linux, without having to port them to Windows.

IBM can provide a highly tailored tools solution via a wide array of products from which a development organization can select what it needs. IBM's solutions are standards based. IBM also reaches out to developers in ways that encourage and foster good will and commitment, which could translate into greater leverage over time for other IBM products and services.

IBM CHALLENGES

IBM still faces the challenge of creating consistency and a similar look and feel across all its own tools and the tools of its partner organizations. Meeting this challenge is critical if the company is to make the most of these additions to its tools portfolio. The recent acquisitions are also scaring some of its valued partners away from Eclipse as these companies consider the threat IBM has become to their continued existence and success.

Now more than ever, IBM prefers to keep its customers within its own architecture and tool family. However, knowing which tools to purchase for specific products is still complex and difficult. Finally, much of IBM's integration solutions still require large

contracts with IBM Global Services in order to implement an effective product customized for a company's individual requirements. While this is a profitability center for IBM, it is an often too expensive proposition for many of IBM's midrange customers.

COMPUTER ASSOCIATES INTERNATIONAL

Computer Associates International Inc. (CA) delivers software and services that enable organizations to have integrated tools solutions that provide full application life-cycle management. CA's new business model is crafted to deliver solutions that extend beyond an organization's boundaries to include the applications and processes of business partners. By assessing requirements, modeling new processes and applications, and providing a visualization of the relationships between business and technology, CA's AllFusion Modeling Suite simplifies and accelerates the complex aspects of analyzing, designing, and implementing applications and business processes.

CA's customers have begun to ask for well-engineered integrated modeling environments as they try to create and manage diverse and/or complex processes across different platforms as well as multiple business partners and complex computing environments. AllFusion Modeling Suite has been positioned to address CA customers' needs and as a suite of tools designed to lower the cost of development. AllFusion Modeling Suite is also designed to meet business requirements and provide users with a better understanding of their corporate business and information architectures. Because AllFusion Modeling Suite can provide valuable insight into business process, data, and applications, it allows individual IT assets to be more easily developed, implemented, and maintained.

AllFusion Modeling Suite includes technologies formerly available as Enterprise Modeling Suite and ERwin Modeling Suite. AllFusion Modeling Suite comprises the following AMDC and complementary business process components:

- ☒ **AllFusion ERwin Data Modeler**, an industry-leading data modeling and database design solution
- ☒ **AllFusion Process Modeler**, a business modeling environment that automates the capture, validation, analysis, and optimization of business and IT processes
- ☒ **AllFusion Component Modeler**, for modeling, designing, visualizing, and maintaining modern business applications
- ☒ **AllFusion Model Manager**, for model management solution

CA supports Microsoft Visual Studio .NET 2003 and gives developers the ability to enhance the business value of their new and upgraded applications. Rules-based components can readily be used in any Visual Studio .NET application deployed on the .NET Framework and delivered as Web services.

COMPUTER ASSOCIATES STRENGTHS

CA provides tools and solutions to address the full life-cycle application development, deployment, and management capability. The company's stated goals are to give its customers the ability to use what they have acquired more effectively and efficiently. The company has begun to make a concerted effort to provide more tools that are based on open standards and more interoperable with other key vendors' solutions. CA developers are very loyal to the company and to its products.

COMPUTER ASSOCIATES CHALLENGES

CA has been criticized in past years for the complexity, proprietary aspects, and somewhat confusing diversity of its product line. It is often difficult for users to understand what suites they need to get their projects done. Although CA has worked to simplify the names of its products, more work has to be done to better integrate and consolidate similar and/or complementary suites to provide a more comprehensive, and interoperable, extended development environment. CA tools seem to be primarily used by existing CA clients. CA needs to increase its marketing and interoperability efforts to improve workflow and workgroup interaction between all the members of the extended development teams in order to help developers work together more efficiently. This effort should have the added effect of being able to attract more outside developers to their tools.

FUTURE OUTLOOK

Companies emerging from this economic downturn will want to find the tools that allow them to implement requirements accurately and reduce the defects in creating code while increasing the quality of the code they produce. They want to create code in a more modularized fashion so that key components can be easily identified, extracted, and available for publishing to a repository or directory for use in Web services. As part of that process, companies hope to use AMDC tools to increase programmer productivity and decrease the cost of development. Companies will not want to staff up until profits are up and the financial outlook is more positive. To survive and be in a strong position once the economy turns around, vendors need to continue developing the tools that companies will require to regain market share and a competitive edge.

AMDC tools vendors need to continue to improve and provide better visual development environments with rich features, templates, components, and abilities to handle and utilize business rules and to incorporate intuitive interfaces and command menus specifically designed to increase programmers' productivity and ability to learn new skills.

AMDC tools that are designed to work with other best-of-breed solutions and become part of full life-cycle development and management solutions will be in the best position to succeed when the economy allows companies to start purchasing the tools that will prepare them to be in a strong competitive position in the future.

AMDC vendors should consider partnering with business rules companies now in preparation for the further consolidation of this market that will occur in the coming years as this market matures and as the bigger vendors begin to increase features and functionality in their tools to help customers develop Web services.

AMDC tools that decrease the cost of development and increase developer productivity as well as begin to automatically generate code will be in demand for some time to come. With the recent spate of consolidations and acquisitions, it will be harder for smaller or single-product vendors to compete with the larger established tools vendors. In order to ensure their continued success, smaller tools vendors or vendors with smaller market shares must do one of the following:

- Provide a specific compelling reason for customers to want to use their products in terms of features that are unique and essential to the developer community and that aren't found in the larger vendors' life-cycle tool suites
- Consider integrating their tools with those from the bigger vendors so their unique features complement the tools that the majority of developers are already using

- ☒ Partner with other complementary tools vendors to extend their own capabilities and together with their partners provide a complete life-cycle solution for their customers
- ☒ Consider repositioning the company to be acquired by one of the large systems vendors that need the capabilities provided in these tools

ESSENTIAL GUIDANCE

2002 was another very challenging year for AMDC tools vendors. This difficulty lingers, primarily due to the combined effects of the downturn in the economy, technology consolidation and acquisition, and the difficult transition to the use of UML and modeling and analysis tools. The market had been growing slowly for several years prior to this decrease, and steady growth is anticipated throughout the forecast period. Interest in UML in particular is growing, and consequently, revenue for those tools will continue to increase. Growth is expected because more and more IT managers and executives are looking at these tools as a way to produce more reliable code, better and faster than using pure 3GL or 4GL/RAD solutions. IDC is still confident that there is opportunity for enterprising AMDC tools vendors that can add additional value and functionality to the large systems vendors.

However, the AMDC tools that will be adopted by companies will be those that make the effort of using AMDC languages and methodologies easy or somewhat automated. The AMDC tools with the best chance of runaway success will be those that are seamlessly integrated into traditional integrated development environment (IDE) frameworks so that the features and functions of both are transparent to the developer.

Early indications are pointing to AMDC development tools as the market that will be in the highest demand as IT budgets open up to allow more tool purchases. Vendors must be able to provide tools that help companies achieve their ROI goals to be in the best position to capitalize on the opportunities presented once companies begin to search for the tools that will help them improve their developer productivity and time to market.

LEARN MORE

RELATED RESEARCH

- ☒ *Worldwide Analysis, Modeling, Design, and Construction Tools Forecast, 2003–2007* (IDC #29049, March 2003)
- ☒ *Worldwide Analysis, Modeling, and Design Tools Forecast Update, 2002–2006* (IDC #28440, December 2002)
- ☒ *Worldwide Analysis, Modeling, and Design Tools Forecast and Analysis, 2002–2006* (IDC #27248, June 2002)
- ☒ *Advances in Technology Ease Development Tasks* (IDC #27176, May 2002)
- ☒ *Worldwide Application Development and Deployment Forecast Summary, 2002–2006* (IDC #26882, April 2002)
- ☒ *Worldwide Analysis, Modeling, and Design Tools Forecast, 2002–2006* (IDC #26642, February 2002)

COPYRIGHT NOTICE

This IDC research document was published as part of an IDC continuous intelligence service, providing written research, analyst interactions, telebriefings, and conferences. Visit www.idc.com to learn more about IDC subscription and consulting services. To view a list of IDC offices worldwide, visit www.idc.com/offices. Please contact the IDC Hotline at 800.343.4952, ext. 7988 (or +1.508.988.7988) or sales@idc.com for information on applying the price of this document toward the purchase of an IDC service or for information on additional copies or Web rights.

Copyright 2003 IDC. Reproduction is forbidden unless authorized. All rights reserved.

Published Under Services: Application Design and Construction Tools; Application Development Tools